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THE UNIVERSITY OF ALBERTA

AFFECT AND THE ATTRIBUTION OF CAUSALITY

by



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The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies for acceptance, a thesis entitled "Affect and the Attribution of Causality" submitted by John Laurie Evans in partial fulfillment of the requirements for the degree of Master of Arts.

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## ABSTRACT

The present study examines, through the framework provided by balance theory, the relationship between two kinds of affect and the attribution of causality. A set of hypotheses was derived from balance theory concerning the relationship between these three variables. Taken together, the four main hypotheses assert that (1) individuals will attribute the cause of a behavior to the actor where the individual likes the actor and the behavior or where the individual dislikes the actor and the behavior; and (2) individuals will attribute the cause of a behavior to something other than the actor where the individual likes the actor and dislikes the behavior or where the individual dislikes the actor and likes the behavior.

These hypotheses are tested with data obtained from 268 University of Alberta undergraduates.

The results show that three of the hypotheses are supported; however, that hypothesis which asserts that the cause of a "liked" behavior will be attributed to something other than the actor, is not supported.

Some of the methodological and theoretical difficulties which are raised by this disparity between the observed and the predicted results are discussed. Suggestions are advanced concerning the additional data which would be necessary to contribute to the resolution of these difficulties.



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## INTRODUCTION

Both philosophers of science and students of cognitive processes have been concerned with the contingencies influencing the attribution of causality.<sup>1</sup> Thus far, however, such concern has been productive of very few controlled studies<sup>2</sup> designed to study the relationship between the attribution of causality and other socio-psychological variables. As a result we know little about the infection that affect brings to thought. We do know that affect has consequences for the content and direction of our thought; we know too that this fact poses a limitation upon our ability to behave rationally. However, even though we are sensitized to the inconsistencies of human thought, our knowledge of specifics is limited.

The present study is designed to help fill this gap. The relationship between the attribution of causality and two kinds of affect is explored through the framework of Heider's balance theory.<sup>3</sup> The thesis, then, is concerned with testing a set of hypotheses derived from Heider's balance theory.

The derivation of this set of hypotheses is presented in the first chapter; the second chapter describes the procedures utilized in testing the hypotheses. The results of the testing are presented and analyzed in the third chapter while the fourth chapter discusses the implications of the results.



## CHAPTER I

### BALANCE THEORY

One of the earliest of the cognitive consistency theories was developed by Heider<sup>4</sup> in an attempt to account for the relationships between various elements of a person's cognitive field through the notion of a tendency toward cognitive balance.

In Heider's system the portion of the actor's cognitive field which is taken into account consists of (a) another person, and (b) an impersonal entity. The actor, the other person, and the impersonal entity are designated by the symbols P, O, and X, respectively.

Whether or not the elements of this POX unit are balanced is determined by the distribution of relations among its three constituent elements. Specifically, the relations among the entities of the system may be of two kinds: (1) sentiment, which refers to attitude, or the relation of liking or evaluating; and (2) unit formation, which refers to such specific relations as similarity, possession, causality, proximity, or belonging. The first of these relations, sentiment, is symbolized by L, with -L symbolizing the opposite of L. The second type of relation, unit formation, is symbolized by U, with -U symbolizing the complement of U.<sup>5</sup>

The balance or imbalance of any POX unit can be determined by the following rule:

In the case of three entities, a balanced state exists if all three relations are positive, in all respects, or if two are negative and one positive.<sup>6</sup>

For example, if P disliked O and O made or did X, then the cognitive structure of P would be balanced if it were also true that P disliked X. Thus, the unit P-LO + OUX +P-LX, is balanced. If P disliked O, and



O caused X, but P liked X, then, by definition, P's cognitive structure would be unbalanced. Thus, the unit  $P-LO + OUX + PLX$ , is unbalanced.

With regard to this model Heider's main proposition is that

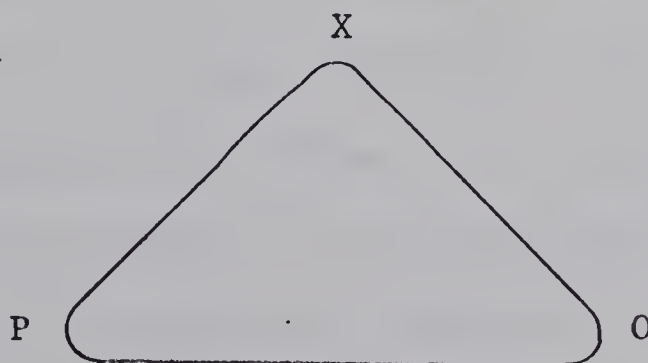
If no balanced state exists, then forces toward this state will arise. Either the dynamic characters change, or the unit relations will be changed through action or through cognitive reorganization.<sup>7</sup> (By "dynamic characters" Heider means the signs of the L relations.)

In applying Heider's model to the relationship between affect and the attribution of causality the following assumptions are made:<sup>8</sup>

- (1) If P likes O, he will tend to expect O to exhibit positive behavior (positive from P's perspective).
- (2) If P dislikes O, he will tend to expect O to exhibit negative behavior (again, negative from P's perspective).

Schematically, the model can be represented as follows: where P is the person from whose perspective the model operates (i.e., the subject); O is an actor of whom P is made aware; and X is a behavior which O has exhibited or is exhibiting.

FIGURE 1



In the above figure there are L relationships (+ or -) between P and X







and between P and O, and there is a unit formation (+ or -) between O and X. In the particular case under consideration the sign of the unit formation is determined by the nature of the explanation P utilizes in explaining O's behavior, X. If P sees O as having caused X the sign of the unit formation is positive. If P does not see O as having caused X the sign of the unit formation is negative.

In terms of Heider's theory it is postulated that P will attempt to maintain balance between his perceptions of O and X and his explanation of O's exhibiting X (line OX in Figure 1).

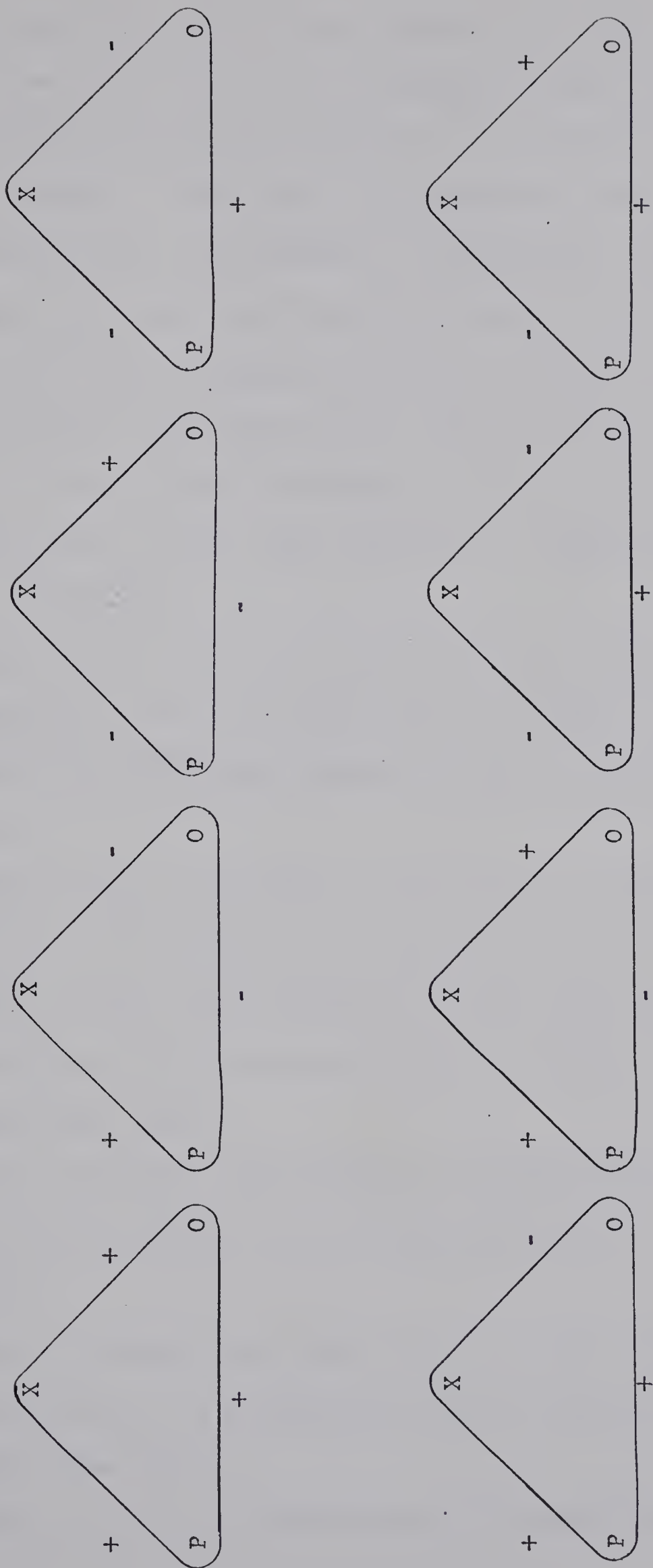
The possible configurations of relations among the entities of the POX unit are given in Figure 2. Using Heider's definition of balance for three entity units (a balanced state exists if all three relations are positive, or if two are negative and one positive) the graphs in the upper row of Figure 2 are balanced and the graphs in the bottom row are unbalanced.

Now, in terms of Heider's model and the assumptions and postulates given above, the graph in Column 1, Row 1 of Figure 2 may be interpreted as follows: P likes O and likes the behavior X which O exhibits, and his explanation (line OX) sees O as having caused X. That is, P attributes the cause of X to O.

To take another example, the graph in Column 2, Row 2 of Figure 2 may be interpreted as follows: P dislikes O, but approves of the behavior X which O exhibits, and his explanation sees O as having caused X. That is, P's explanation assigns the locus of cause to O. By definition this unit is unbalanced. This is so because (1) from assumption 2, if P dislikes O he will tend to expect O to exhibit negative behavior (negative in P's evaluation), and (2) P will attempt



FIGURE 2





to maintain balance among the various elements of the POX unit. P could have balanced the unit by not assigning the locus of cause to O.

A similar interpretive procedure can be followed with all the graphs in Figure 2. When this is done hypotheses about the nature of the explanation, OX, can be derived. Alternatively, since the balance of a graph may be determined multiplicatively, the nature of the explanation which would be predicted by balance theory can be determined from knowledge of the signs of the lines PX and PO. For example, in the graph in Row 1, Column 1 of Figure 2, PX is +, PO is - ; to balance OX would have to be - since  $(+)(-)(+) = -$  (unbalanced), whereas  $(+)(-)(-) = +$  (balanced).

Since Heider's theory postulates a strain toward balance, one would hypothesize that the graphs in Row 1 of Figure 2 would obtain. When interpreted the four graphs in Row 1 of Figure 2 yield the following hypotheses:

- (1) Where P likes O and likes X, P will tend to explain O's behavior X by assigning the locus of cause to O.
- (2) Where P likes O and dislikes X, P will tend to explain O's behavior X by assigning the locus of cause to something other than O.
- (3) Where P dislikes O and dislikes X, P will tend to explain O's behavior X by assigning the locus of cause to O.
- (4) Where P dislikes O and likes X, P will tend to explain O's behavior X by assigning the locus of cause to something other than O.

Thus far it has been demonstrated that Heider's balance



theory allows the derivation of hypotheses concerning the manner in which affect is related to the attribution of causality; however, nothing has been said concerning the worth of Heider's theory, insofar as it has been utilized in investigating problems similar to the present concern.

Early research<sup>9</sup> which was designed to put Heider's theoretical ideas to empirical test generally found support for the central ideas of balance theory, but, at the same time, they "pointed to the need to extend the theory beyond its original scope and provided evidence that the original theory was in need of conceptual clarification".<sup>10</sup> A significant contribution to clarifying the theory was made by Cartwright and Harary<sup>11</sup> through a formalization of Heider's balance theory in terms of the mathematical theory of signed graphs. The formalization resolves some of the major problems raised by Heider's theory<sup>12</sup> and has been utilized extensively in subsequent research.

Although Cartwright and Harary's formalization of Heider's theory does clarify and extend the original theory, there remain several difficult problems. One such problem involves the theory's apparent inability to handle adequately the data where the relationship between P and O is negative. The evidence<sup>13</sup> is consistent in indicating that balance, as defined by Heider or by Cartwright and Harary, does not allow prediction of the effects which obtain when the P - O bond is negative.

The majority of these studies, which show the inconsistency between balance theory predictions and the conditions which actually obtain when the P - O bond is negative, have given subjects completed







POX units and have asked them to indicate their feeling of comfort, of tension, with the units. The results in such studies are consistent in showing that when a negative relation exists between P and O, the subjects show greater discomfort than they do in units where there is a positive relation between P and O, where the degree of balance of the POX units has been controlled.

One such study by Price, Harburg and Newcomb<sup>14</sup> shows that, while only 5% and 6% of their subjects felt uneasy with two balanced units where the P - O bonds were positive, 43% and 28% of the subjects felt uneasy with two balanced units where the P - O bond was negative.

Theoretically balanced units should not leave subjects uneasy with the situation; however, where the P - O bond is negative this is the case. It would seem that the subjects feel some anxiety in response to a negative bond between P and O in addition to the anxiety which Heider posits is felt in response to unbalanced units. Accordingly, where the subject is confronted with an unbalanced situation where the P - O bond is negative, he has a further increment of tension producing anxiety than is the case where the P - O bond is positive. Now, it is one of Heider's central postulates that where there is an unbalanced unit the tension produced by this imbalance will augment balance seeking. One would expect, then, that where there is a further increment of tension producing anxiety there would be a still greater strain toward balance. Stated in the form of a hypothesis: in an unbalanced situation where P dislikes O there will be a greater tendency to cognitive balance than there will be where P likes O, regardless of the particular behavior X.



SUMMARY OF HYPOTHESES

When this hypothesis is placed in the context of the four hypotheses stated earlier we have the following:

- (1) Where P likes O and likes X, P will tend to explain O's behavior X by assigning the locus of cause to O.
- (2) Where P likes O and dislikes X, P will tend to explain O's behavior X by assigning the locus of cause to something other than O.
- (3) Where P dislikes O and dislikes X, P will tend to explain O's behavior X by assigning the locus of cause to O.
- (4) Where P dislikes O and likes X, P will tend to explain O's behavior X by assigning the locus of cause to something other than O.
- (5) Where P dislikes O there will be a greater tendency to cognitive balance than there will be when P likes O, regardless of the particular behavior X.



## FOOTNOTES

<sup>1</sup>When causal explanations are offered for behaviorial acts the cause of the act can be attributed to either the person exhibiting the act or to some other causal agent, or both. When the term 'attribution of cause' is used here reference is made to this location of the causal agent.

<sup>2</sup>One exception is Harold Schiffman and Ronald Wynne, "Cause and Affect," Princeton: Educational Testing Service, RM-63-7 (July, 1963).

<sup>3</sup>Fritz Heider, "Social Perception and Phenomenal Causality," Psychological Review, Vol. 51 (November, 1944), pp. 358-374; Fritz Heider, "Attitudes and Cognitive Organization," Journal of Psychology, Vol. 21 (January, 1946), pp. 107-112; Fritz Heider, The Psychology of Interpersonal Relations (New York: John Wiley and Sons, 1958).

<sup>4</sup>Ibid.

<sup>5</sup>Cartwright and Harary maintain that it is necessary to distinguish between the complement of a relation and its opposite. The complement of a relation is expressed by adding the word "not" while the opposite is indicated by the prefix "dis" or its equivalent. However, with respect to the unit formation we will be concerned with (causality), there is no opposite. Accordingly, in the case of unit formations, we need not be concerned with the distinction. Cf. Dorwin Cartwright and Frank Harary, "Structural Balance: A Generalization of Heider's Theory," Psychological Review, Vol. 63 (September, 1956), pp. 277-293.

<sup>6</sup>Heider, op. cit., 1946, p. 110.

<sup>7</sup>Other major propositions are (a) "If no change (in the cognitive structure) is possible, the state of imbalance will produce tension." (Heider, op. cit., 1946, p. 108); (b) "Logically L is not transitive, but there exists a psychological tendency to make it transitive when implications between U relations do not interfere with transitivity." (Heider, op. cit., 1946, pp. 109-110); and (c) "A balanced state exists if all parts of a unit have the same dynamic character (i.e., if all are positive or all are negative) and if entities with different dynamic character are segregated from each other." (Heider, op. cit., 1946, p. 107).

<sup>8</sup>Both of these assumptions follow directly from Heider's theory; they do not change the theory substantially.

<sup>9</sup>For example, Milton W. Horowitz, Joseph Lyons, and Howard V. Perlmutter, "Induction of Forces in Discussion Groups," Human Relations, Vol. 4 (1951), pp. 57-76; Nehemiah Jordan, "Behavioral Forces That are a Function of Attitudes and of Cognitive Organization," Human Relations, Vol. 6 (1953), pp. 273-287; and Julian O. Morrisette, "An Experimental Study of the Theory of Structural Balance," Human Relations, Vol. 11 (1958), pp. 239-254.





<sup>10</sup>J. Berger, B. P. Cohen, J. L. Snell, and M. Zelditch, Types of Formalization in Small Group Research, (Boston: Houghton Mifflin Co., 1962).

<sup>11</sup>Cartwright and Harary, op. cit.

<sup>12</sup>Cf. Berger et al, op. cit., for an exposition of the formalization and the benefits which follow from it.

<sup>13</sup>S. H. Davol, "An Empirical Test of Structural Balance in Sociometric Triads," Journal of Abnormal and Social Psychology, (1959, 59), pp. 393-398.

E. Harburg and K. Price, (unpublished study cited by R.B. Zajonc), "The Concept of Balance, Congruity, and Dissonance," Public Opinion Quarterly, (1960, 24), pp. 280-296.

M. W. Horowitz, J. Lyons, and H. V. Perlmutter, "Induction of Forces in Discussion Groups," Human Relations, (1951, 4), pp. 57-76.

N. Jordan, "Behavioral Forces That are a Function of Attitude and Cognitive Organization," Human Relations, (1953, 6), pp. 273-287.

N. Kogan and R. Tagiuri, "Interpersonal Preference and Cognitive Organization," Journal of Abnormal and Social Psychology, (1958, 56), pp. 113-116.

M. Ohashi, "Sociometric Choice Behavior and Interpersonal Perception in a Triad," Japanese Psychological Research, (1964, 6) pp. 72-84.

K. O. Price, E. Harburg, and T. M. Newcomb, "Psychological Balance in Situations of Negative Interpersonal Attitudes," Journal of Personality and Social Psychology, (1966, 3), pp. 265-270.

A. Rodrigues, "On the Differential Effects of Some Parameters of Balance," Journal of Psychology, (1965, 61), pp. 241-250.

A. Rodrigues, "The Psycho-logic of Interpersonal Relations," (Doctoral dissertation, University Microfilms, Ann Arbor, Michigan, 1966).

<sup>14</sup>Price, Harburg, and Newcomb, Ibid.





## CHAPTER II

### PROCEDURE

In order to provide the data necessary to test the hypotheses advanced in the first chapter a research instrument was devised which allowed for group administration. Each subject was given a booklet<sup>1</sup> and was asked to refrain from looking through it until instructed to do so. The project was then introduced<sup>2</sup> and the subjects were assured of anonymity.

The subjects were then asked<sup>3</sup> to fill in the first page of the booklet which required check marks in response to simple background and demographic questions. These questions were asked primarily to draw the subjects' attention to the question booklet.

The second page of the booklet presented a list of ten different behaviors.<sup>4</sup> The subjects were asked to consider all of these behaviors and to indicate with a check mark the behavior to which they felt most indifferent.<sup>5</sup>

The subjects were then asked to weight each of the behaviors relative to a designated behavior which had been assigned a score by the instructor.<sup>6</sup>

The next five pages of the booklet, labelled one through five, were otherwise blank. On each of these pages the subjects were asked to make some notation which would later identify for them the persons they were asked to think about. On the first of these pages each subject's notation was to represent some actual person known to the subject and "liked very much". It was stressed that the identifying notations were for the subject's own use and that the experimenter had absolutely no interest in knowing the identity of the person the subject



was thinking of.

The same instructions were given for identifying a person for each of the following categories: "like", "felt indifferent to", "disliked", and "disliked very much". The subjects were instructed to make identifying notations (in the above order) on pages 2, 3, 4, and 5, respectively.<sup>7</sup>

When all the respondents had completed their identifying notations they were asked to turn to the last page of the booklet and unfold it. This last page listed the same behaviors as previously rated with the numbers one through five randomly assigned to any five of the ten behaviors. Each subject was then instructed to turn back to the page on which he had made an identifying notation for the person "liked very much". The booklet was so constructed that the subject had both the list of behaviors and the page with his identifying notation in view.

The subject was then asked to write a brief account of what he thought would explain, would account for, the person he "liked very much" exhibiting the behavior indicated on the last page by a Number 1. It was stressed that the only question the subjects were to respond to was "What do you think would account for, would explain this person's action if he in fact did exhibit the behavior in question?" The question was not "Would it be possible for this person to exhibit the behavior in question?", but "what would account for his actions?"

The subjects were then instructed to turn to the page on which they had made identifying notations for the person "liked". Each subject was then asked to write a brief account of what he thought would explain, would account for, the person he "liked" exhibiting the



behavior indicated on the last page of the booklet by a Number 2. Once again it was stressed that the question was not "Would it be possible for this person to exhibit the behavior in question?", but "what would account for his actions?"

The same instructions were given for the remaining three situations: the person "felt indifferent to" exhibiting behavior 3; the person "liked" exhibiting behavior 4; and the person "liked very much" exhibiting behavior 5.

The entire procedure yielded the following information from each subject:

- (1) Selected demographic and background information;
- (2) A measure of affect toward each behavior, together with
- (3) the subject's own zero point on his rating of the behaviors, i.e. the subject's own indifference point;
- (4) The location of one person on each point of a five point scale from "like very much" through to "dislike very much"; and
- (5) Explanations of five different behaviors "exhibited" by five different persons known to the subject.

#### THE SUBJECTS

268 undergraduate students from several introductory sociology courses and from one second year evening credit course at the University of Alberta served as subjects. Since an attempt to achieve a representative sample would have been too time consuming and costly the subjects were selected on the basis of availability.



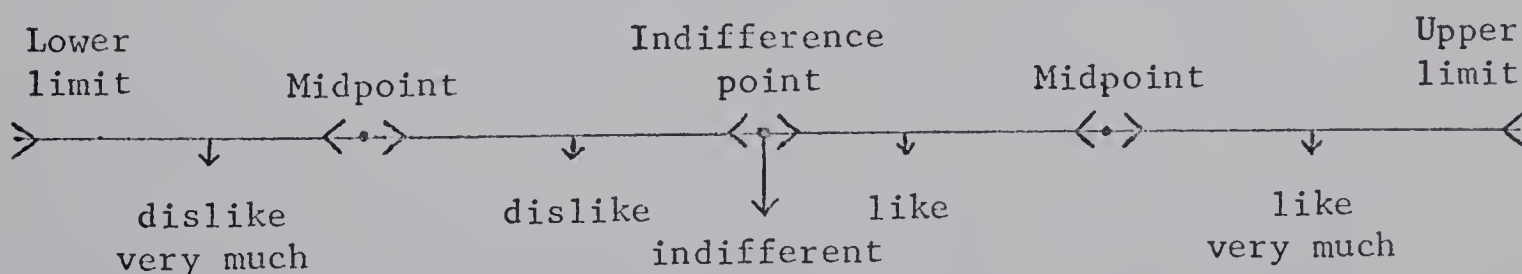


CODING

The only items which were not precoded were the ratings of the behaviors and the explanations offered by the subjects.

The behavior rating procedure required each subject to weight each behavior in relation to a standard behavior which had been assigned a score of 10 by the experimenter. Each subject was free to use whatever number represented his affect toward each behavior. In order to make the raw scores meaningful, it was found analytically fruitful to transfer each respondent's raw scores to a five point scale. Therefore, it was necessary to calculate cutting points for each individual. This was done by the coder according to the following general instructions:

- (1) Locate the subject's lower limit, point of indifference, and upper limit;
- (2) Calculate the midpoint between the lower limit and the point of indifference;
- (3) Calculate the midpoint between the point of indifference and the upper limit;
- (4) The above three steps yield the five points shown in the top line of the figure below. Place each number to be coded in the appropriate category in the bottom row of the figure below. Code only those behaviors which have been explained.<sup>8</sup>



In coding the explanations the coder had to make a judgment





as to whether or not each explanation assigned the locus of cause to the actor. With few exceptions this judgment was not difficult to make; the explanations were generally unambiguous; their authors either assigned the cause of an action to the actor (and saw him as responsible for it) or they did not.



## FOOTNOTES

<sup>1</sup>A sample booklet is included as Appendix I.

<sup>2</sup>The introduction simply informed the subjects that the project was part of the experimenter's M.A. thesis; nothing was said in the introduction about the nature of the investigation. However, after the subjects had completed their task the entire procedure was explained to them.

<sup>3</sup>The instructions which were given the subjects are included as Appendices 2, 3 and 4. The text gives a rather brief account of the procedure; where more detail is desired it can be found in these Appendices.

<sup>4</sup>Cf. Appendix 1.

<sup>5</sup>As can be seen from the instructions in Appendix 2 the subjects were informed that their indifference point would be that point of neutrality between "dislike" and "like".

<sup>6</sup>The complete set of instructions given to the subjects for assigning weights to the behaviors is given in Appendix 3.

The particular variation of the magnitude estimation procedure which was used in this study is adapted from Thorsten Sellin and Marvin E. Wolfgang, The Measurement of Delinquency (New York: John Wiley and Sons, 1964). Selling and Wolfgang used a magnitude estimation procedure to have subjects indicate how serious they felt a variety of criminal acts to be. Their task is similar enough to the task of having subjects indicate their affect toward a series of behaviors to allow the use of Sellin and Wolfgang's instructions to their subjects with only minor word changes. This study therefore had the advantage of having a tested administrative procedure to start with.

A further advantage in using a magnitude estimation procedure is that, in contrast to the more usual category scale (e.g. an 11 point scale), a magnitude scale theoretically has no established upper limit, and any number greater than zero can be used as the lower limit. As a result the rater has an indefinite number of discriminatory points available to him and his ratings are not forced in the same way as they are by more restricted category scales.

<sup>7</sup>This procedure for measuring affect toward individuals was used in an attempt to make the entire session more real and interesting to the subjects. It was felt that having the subjects think of persons known to them would reduce the incidence of thoughtless answers. Conversations with several of the subjects suggested that this procedure did indeed help in maintaining interest and in forcing the subjects to put some thought into their answers.

<sup>8</sup>The transfer of the raw scores onto a five point scale is illustrated in the following example:

Let us assume that a respondent has assigned a weight of 100 to the behavior he "felt most indifferent to". Assuming further that the most heavily weighted behavior was given a score of 1000 and the least heavily weighted a score of 10, the coder would proceed in the following fashion:



- (1) The lower limit, point of indifference, and the upper limit are 10, 100 and 1000, respectively.
- (2) The midpoint between the lower limit and the point of indifference is defined by the following formula:

$$\text{Lower limit} + \frac{(\text{Point of indifference} - \text{Lower limit})}{2}$$

$$\text{Thus, } 10 + \frac{(100 - 10)}{2} = 55$$

- (3) The midpoint between the point of indifference and the upper limit is defined by the following formula:

$$\text{Upper limit} - \frac{(\text{Upper limit} - \text{Point of indifference})}{2}$$

$$\text{Thus, } 1000 - \frac{(1000 - 100)}{2} = 550$$

- (4) The above three steps give the cutting points for the five point scale. Thus, for this individual the cutting points are 10, 55, 100, 550, and 1000. On the five point scale to be used in the analysis a behavior assigned a weight falling between 10 and 55 would be coded as "disliked very much". A behavior assigned a weight falling between 55 and 100 would be coded as "disliked". A behavior assigned a weight falling between 100 and 550 would be coded as "liked". Any behavior assigned a weight of 100 would be coded as "felt indifferent to". A behavior assigned a weight falling between 550 and 1000 would be coded as "liked very much".

The following additional instructions to the coder were necessary in order to handle some of the booklets which were incomplete or suffered from other complications:

- If the point of indifference equals the upper limit only the most approved and the most disapproved can be coded;
- If the indifference point has been checked but has not been weighted, only the point of indifference and upper and lower limit behaviors can be coded.





## CHAPTER III

### RESULTS

In order to test the hypotheses advanced in the first chapter, cross tabulations were examined between various levels of affect toward behaviors and mode of explanation controlling for levels of affect toward individuals. The following table presents the results of the first part of the analysis.

If the categories of Table 1 are collapsed so that we have the categories dislike, indifference, and like for both affect toward behaviors and affect toward individuals, Table 1 can be schematically represented in bar graphs. This has been done in Figures 1 and 2.

Looking at Figure 1 it can be seen that where the subjects dislike the actor and dislike the behavior exhibited by that actor, their explanations assign the locus of cause to the actor 75% of the time. This finding is in accord with the third hypothesis advanced in the first chapter which states "where P dislikes O and likes X, P will tend to explain O's behavior X by assigning the locus of cause to O." As we have seen from Figure 1, under the conditions stated in the above hypothesis, 75% of the time P does in fact tend to explain O's behavior X by assigning the locus of cause to O.

Figures 3 and 4 present the data relevant to the third hypothesis by making use of the original categories of Table 1. Figure 3 shows that, in the case where the subjects "dislike very much" both the actor and his action, their explanations assign the locus of cause to the actor 81% of the time. Where the subjects just "dislike" the actor the figure drops to 53%, as can be seen in Figure 4.

The fourth hypothesis advanced in the first chapter states





TABLE 1 - Percentage of subjects assigning locus of cause to the actor by affect toward individuals and affect toward behaviors.

|                   | <u>AFFECT TOWARD INDIVIDUALS</u> |           |             |           |
|-------------------|----------------------------------|-----------|-------------|-----------|
|                   | Dislike very much                | Dislike   | Indifferent | Like      |
| Dislike very much | 81% (83)                         | 53% (61)  | 59% (64)    | 44% (41)  |
| Dislike           | 71% (5)                          | 85% (11)  | 69% (9)     | 75% (6)   |
| Indifferent       | 83% (20)                         | 79% (23)  | 61% (14)    | 83% (24)  |
| Like              | 83% (20)                         | 96% (27)  | 73% (16)    | 84% (32)  |
| Like very much    | 81% (34)                         | 83% (25)  | 87% (40)    | 94% (37)  |
| Totals:           | 81% (162)                        | 68% (147) | 68% (143)   | 68% (140) |
|                   |                                  |           |             | 56% (120) |

AFFECT TOWARD BEHAVIOR



FIGURE 1 - Percentage of explanations attributing the locus of cause to the actor by affect toward behaviors where the affect toward the actor is "dislike" or "dislike very much".

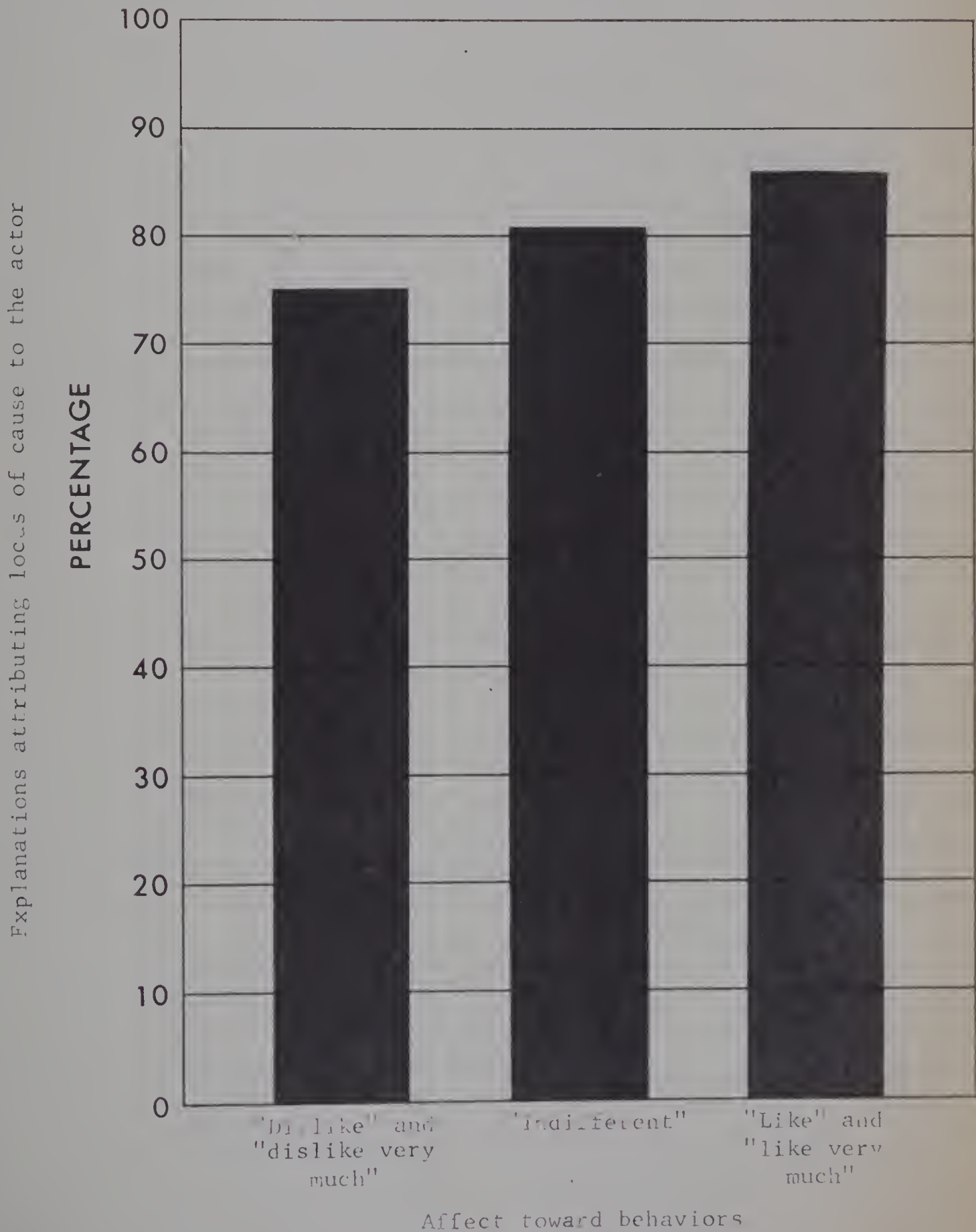




FIGURE 2 - Percentage of subjects attributing the locus of cause to the actor by affect toward behaviors where the affect toward the actor is "like" and "like very much".

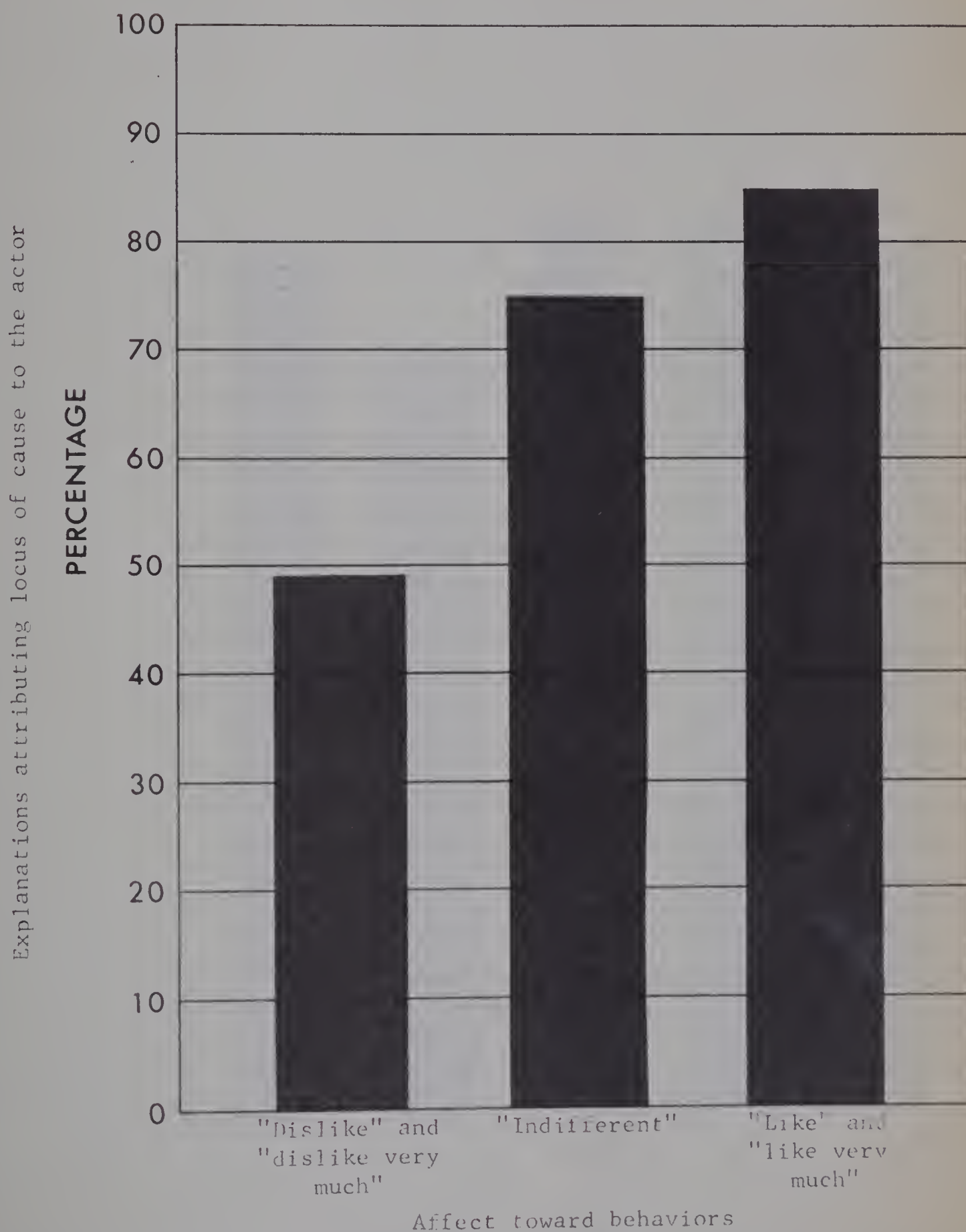




FIGURE 3 - Percentage of explanations attributing the locus of cause to the actor by affect toward behaviors where the affect toward the actor is "dislike very much".

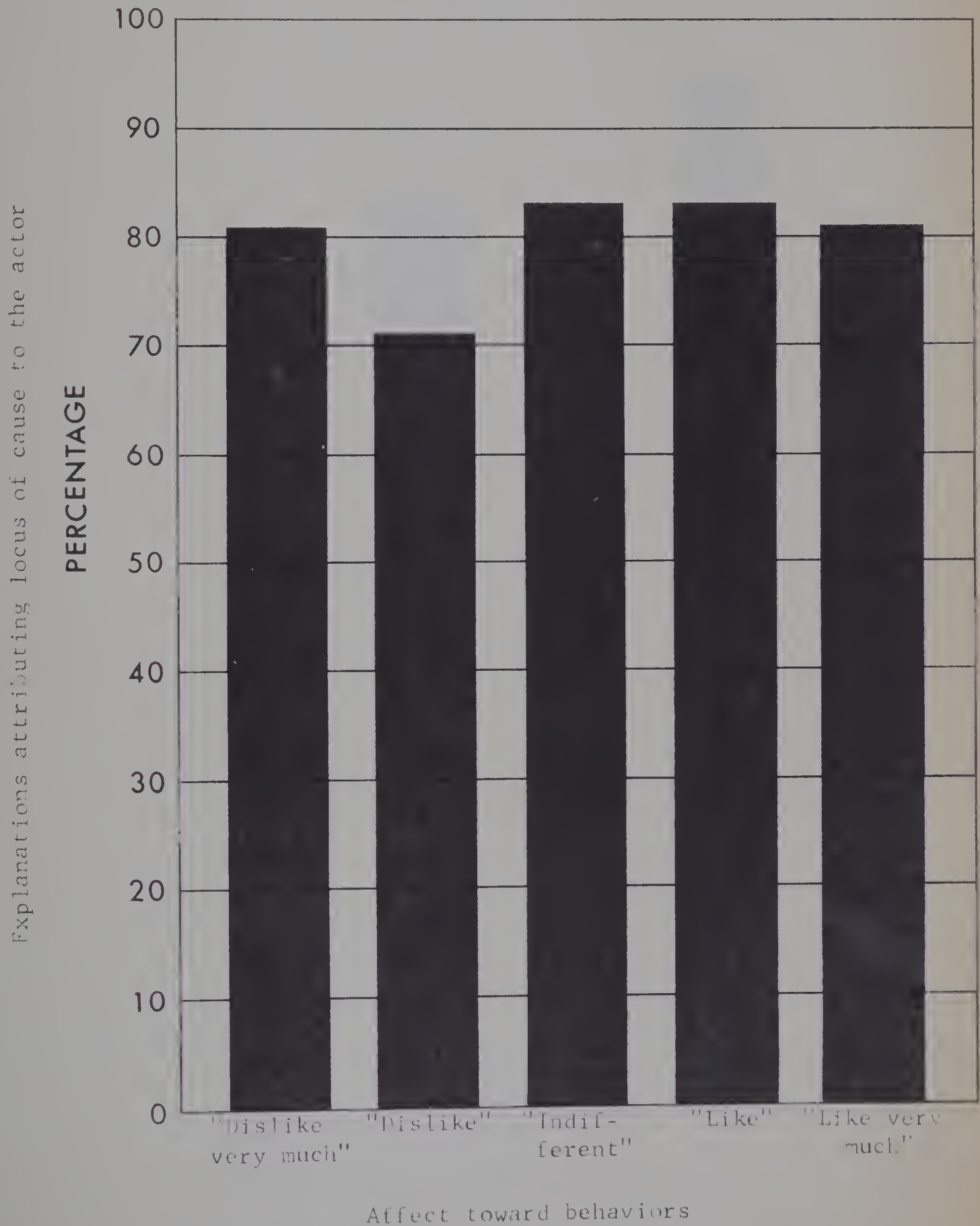
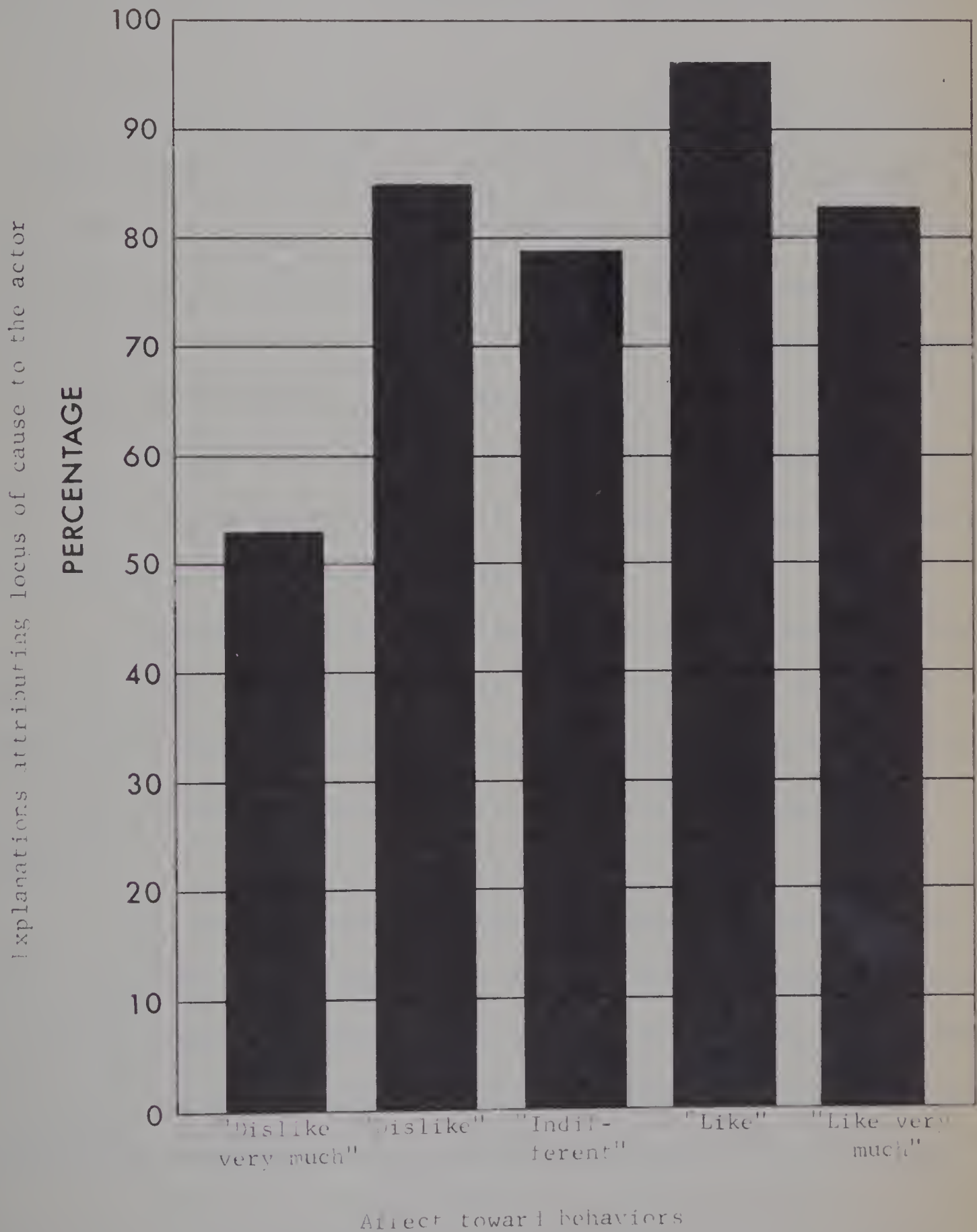








FIGURE 4 - Percentage of explanations attributing the locus of cause to the actor by affect toward behaviors where the affect toward the actor is "dislike".





that "where P dislikes O and likes X, P will tend to explain O's behavior X by assigning the locus of cause to something other than O".

Turning to Figure 1 one can see that the above hypothesis is definitely not supported by the data. Where the subjects dislike the actor, O, and like the behavior, X, 86% of the time their explanations assign the locus of cause to the actor, O. The hypothesis holds that the opposite would obtain.

Figures 3 and 4, which use the original categories of Table 1, show that for the extremes - the case where the subjects "dislike very much" the actor and "like very much" the behavior he exhibits - 81% of the time the explanations assign the locus of cause to the actor. Where the subjects "dislike" the actor and "like" the behavior he exhibits this figure jumps to 96%.

The first hypothesis advanced in the first chapter states that "where P likes O and likes X, P will tend to explain O's behavior X by assigning the locus of cause to O".

Figure 2 shows that this hypothesis is supported by the data with 85% of the explanations offered in response to the conditions described in the hypothesis assigning the locus of cause to the actor O. Figures 5 and 6 present data using the original categories of Table 1.

The second hypothesis holds that "where P likes O and dislikes X, P will tend to explain O's behavior X by assigning the locus of cause to something other than O. Turning to Figure 2, one can see that where the subjects like the actor and dislike his actions, their explanations assign the locus of cause to the actor 49% of the time.



FIGURE 5 - Percentage of explanations attributing the locus of cause to the actor by affect toward behaviors where the affect toward the actor is "like".

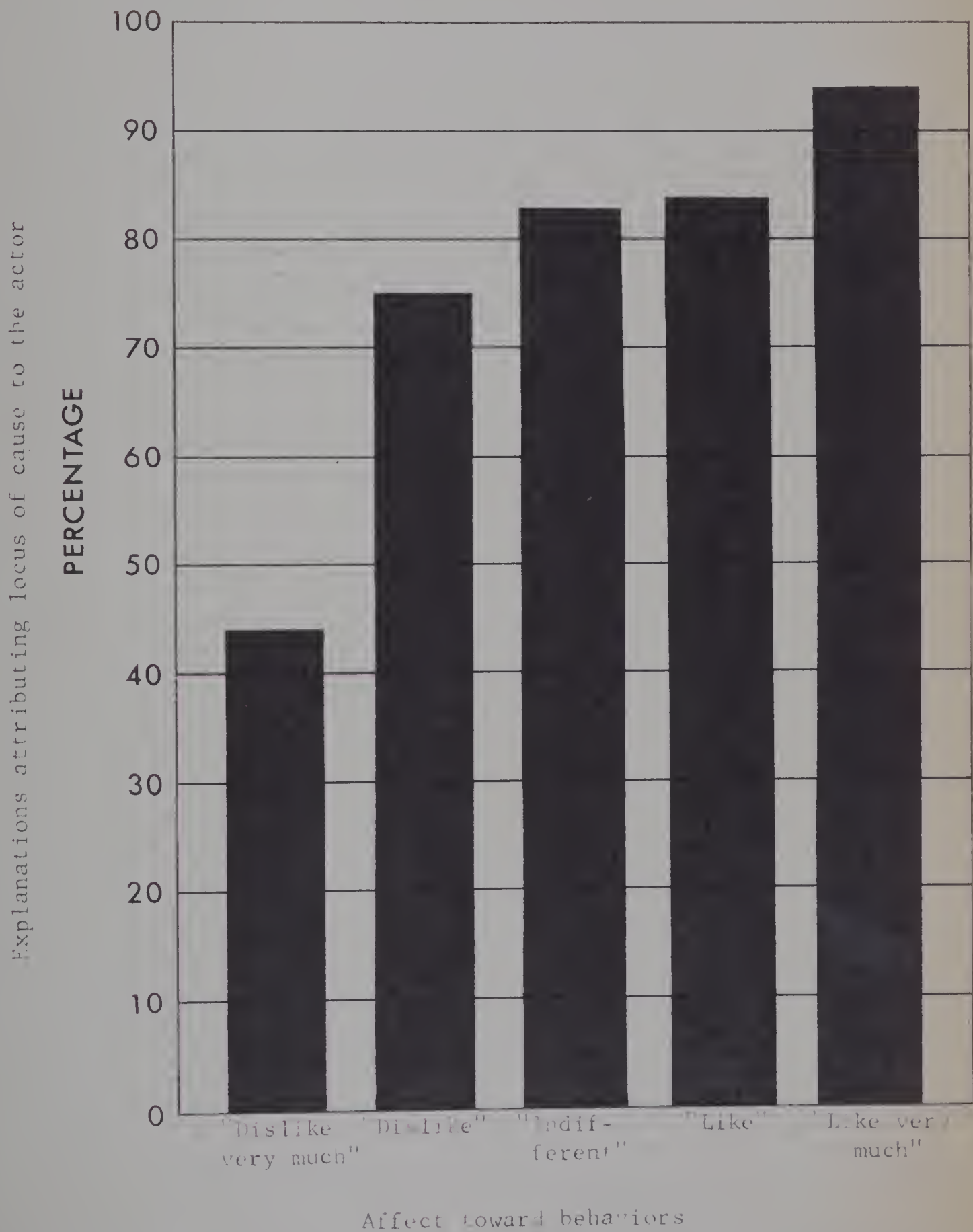
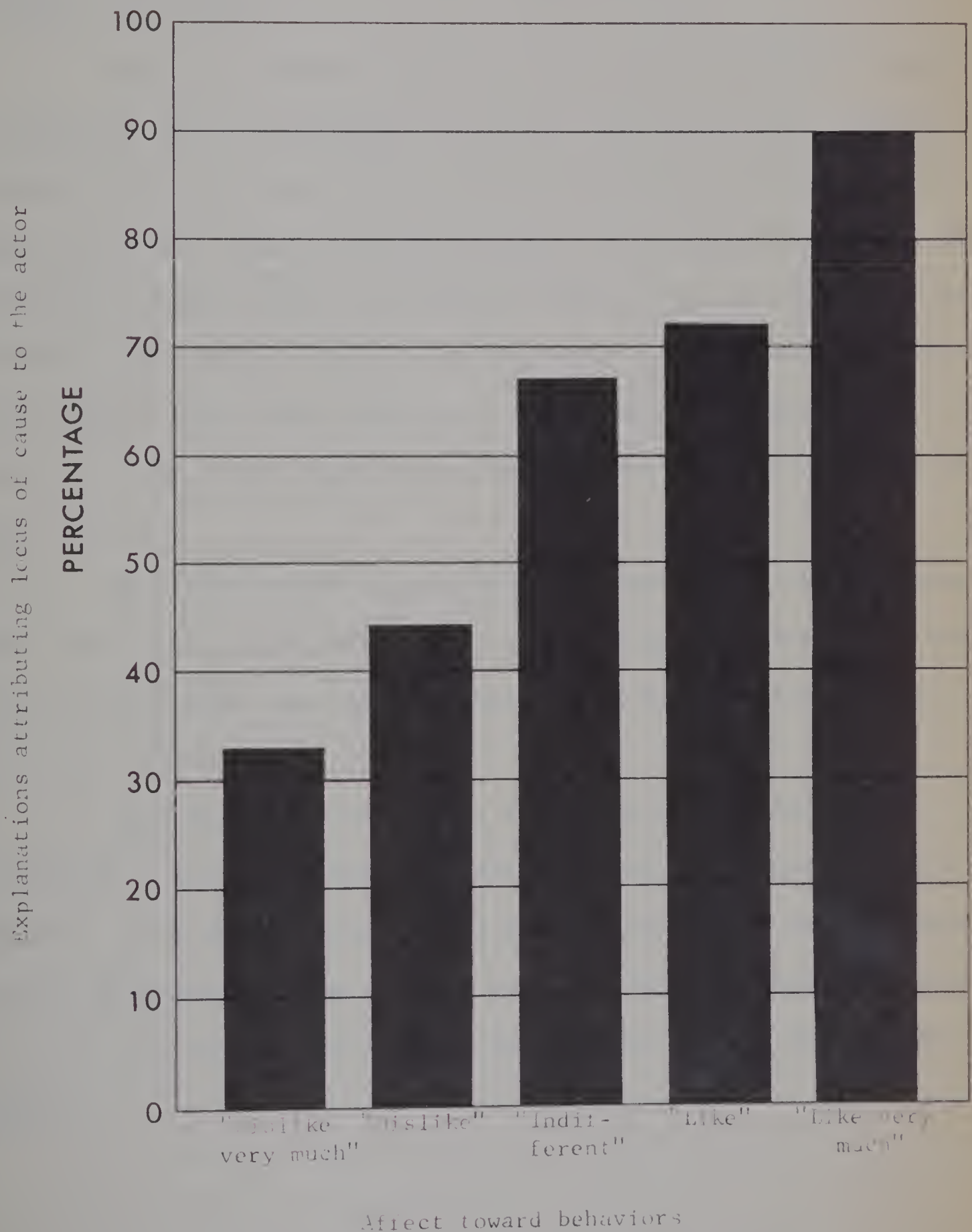






FIGURE 6 - Percentage of explanations attributing the locus of cause to the actor by affect toward behaviors where the affect toward the actor is "like very much".







Using the collapsed categories of Figure 2, then, the hypothesis is neither supported nor denied. However, turning to Figure 6, it can be seen that where the subjects "like" the actor "very much" and "dislike very much" the behavior he exhibits, they assign the locus of cause to the actor only 33% of the time. For the extremes, then, the hypothesis receives more support.

Where the subjects "like" the actor and "dislike" his behavior the locus of cause is assigned to the actor 75% of the time. Where the subjects "like" the actor and "dislike very much" the behavior he exhibits, 44% of the time they assign the locus of cause to the actor. The same figure obtains where the subjects "like" the actor "very much" and "dislike" the behavior exhibited by that actor. The hypothesis receives mild support, then, where there is at least one extreme measure of affect; that is, when there is one "dislike very much" or one "like very much" involved.

The fifth and final hypothesis advanced in the first chapter holds that "where P dislikes O there will be a greater tendency to cognitive balance than there will be when P likes O, regardless of the particular behavior X".

This hypothesis maintains, then, that of the other four hypotheses, 3 and 4 will have a greater tendency to balance than will 1 and 2. Since the third hypothesis receives no support from the data the 5th hypothesis must be rejected as well. From the data there does not seem to be any greater tendency to cognitive balance where P dislikes O.



## SUMMARY OF RESULTS

Table 2 presents a summary of the results as they relate to the first four hypotheses advanced in the first chapter. Each of these hypotheses is listed in Table 2 together with the percentage of cases falling in the direction predicted by each hypothesis.



TABLE 2 - Summary of Results

|         | <u>HYPOTHESIS 1</u> - Where P likes O and likes X, P will tend to explain O's behavior X by assigning the locus of cause to O. | <u>HYPOTHESIS 2</u> - Where P likes O and dislikes X, P will tend to explain O's behavior X by assigning the locus of cause to something other than O. | <u>HYPOTHESIS 3</u> - Where P dislikes O and dislikes X, P will tend to explain O's behavior X by assigning the locus of cause to O. | <u>HYPOTHESIS 4</u> - Where P dislikes O and likes X, P will tend to explain O's behavior X by assigning the locus of cause to something other than O. |
|---------|--|--|--|--|
|         | Percentage in predicted direction  | Percentage in predicted direction  | Percentage in predicted direction  | Percentage in predicted direction  |
| Row A*  | 85   | 51   | 75   | 14   |
| Row B** | 90   | 77   | 81   | 19   |

\*The percentages in Row A present the results from Figures 1 and 2 where the categories "like very much" and "like" have been combined as have the categories "dislike very much" and "dislike".

\*\*The percentages in Row B are those obtained when only the extreme categories of affect ("dislike very much" and "like very much") are considered.



CHAPTER IV  
IMPLICATIONS

Two general features of the empirical findings of the previous chapter underscore a theoretical problem of some importance.

First, we find that where the affective bond from P to O is positive Heider's balance theory predicts the results obtained. In the second situation - where the affective bond from P to O is negative - balance theory predictions are supported in one case but are in a direction opposite to the findings in the other.

These results, obtained in cases where the POX unit contained a unit formation (causality), are similar to the results obtained by various other authors<sup>1</sup> who have worked with balance models containing sentiment relations exclusively. In such units it has been found that balance theory predictions are generally accurate where the P - O bond is positive, but are not where the P - O bond is negative. Since the results in the two different situations tend to be in the same direction it will be worthwhile to examine briefly some of the work which has been done with POX units containing sentiment relations exclusively. This examination shall be concerned primarily with (1) examining a theoretical argument which has been advanced to account for the disparity between the predicted and the obtained results in POX units containing only sentiment relations; (2) determining whether or not this theoretical argument may be applicable to POX units containing a unit formation; and (3) examining the general procedures used in studies (including the present one) whose results have been contrary to the predictions of balance theory.

On the basis of the discussion of the above points suggestions





are advanced concerning the additional data which would be necessary in order to contribute to the resolution of the theoretical and methodological difficulties raised by the disparity between the observed and predicted results.

The majority of the studies finding that balance theory adequately handles the data where the P - O bond is positive, but not where the P - O bond is negative, have been done using sentiment relations exclusively. That is, only attitudinal relations are considered between the entities of the POX system. More specifically, the difficulties experienced by balance theory when the P - O bond is negative have been shown in a series of investigations<sup>2</sup> in which the subjects are involved in hypothetical (in rare cases real situations have been utilized) POX units. The degree of tension experienced by the subjects when they are involved in various units is assessed and compared with tension level predictions derived from balance theory. According to balance theory, tension should be low when the units are balanced and high when they are imbalanced. However, it has been consistently found that high tension is experienced when subjects are involved in balanced units containing a negative P - O bond, and relatively low tension is experienced when the subjects are involved in imbalanced units containing a negative P - O bond.

A good example of this type of study is Jordan's early research<sup>3</sup>. Jordan set out to test the effects of balance on a series of hypothetical POX units consisting of an actor, another person in the actor's lifespace, and an impersonal entity in the lifespaces of both the actor and the other person. Jordan found that there was a definite



preference order of units within the set of balanced triads and within the set of imbalanced triads which was a function of the relationships among the various elements of the POX unit. Among the set of balanced triads, subjects preferred those units containing a positive P - O bond. Balanced units containing a negative P - O bond received preference ratings not significantly different from imbalanced triads.

Attempts to account for the unexpected results of the series of experiments discussed above have led some authors<sup>4</sup> to suggest studies designed to set scope limits to present statements of balance theory. Other authors; notably Rodrigues<sup>5</sup>, have called for the elaboration of a broad theory of interpersonal relations in which balance forces will be viewed as just one source of cognitive bias.

One factor which Rodrigues has demonstrated may be a further and significant source of cognitive bias is forces toward agreement. In a recent major paper Rodrigues<sup>6</sup> has found support for the following hypothesis:

...given a triad in which p's feelings toward o and toward x is established, and p is to predict o's feelings toward x, p will predict the missing bond according to the principle of balance more often when agreement between p and o is called for by this principle than when disagreement between p and o is required by it.<sup>7</sup>

The results of Rodrigues' experiments show that forces toward agreement operate simultaneously with forces toward balance. In 11 of the 12 situations tested by Rodrigues, subjects responded as would be predicted by balance theory where both balance forces and agreement forces pointed to the same conclusion. Where balance and agreement forces were in conflict significantly fewer of the subjects responded as would be predicted by balance theory.



In considering Rodrigues' results, it must be remembered that his study was done using sentiment relations exclusively; no unit formations were involved. Since this is the case with most of the studies showing the difficulties balance theory encounters when the P - O bond is negative, it is reasonable to suggest that Rodrigues' agreement forces were operative in these studies as well. One can argue, that, on the basis of Rodrigues' results, the unexpected results of the numerous studies referred to above<sup>8</sup> can be attributed to the conflict between balance and agreement forces.

However, the present study makes use of a unit formation - that of causality - rather than the sentiment relations which characterize most of the studies utilizing Heider's balance theory. However, it is possible that agreement forces may be an important factor even when a unit formation is included among the relations of a POX unit. Agreement forces could have an effect on POX units containing a unit formation in the following manner. In a situation when P is asked to consider a disliked actor exhibiting a liked behavior he may project his positive affect toward the behavior to O. It may be that the subject P has a strong tendency to project positive affect toward behaviors. That is, many subjects may find it difficult to comprehend how another person could feel differently toward an act which the subject "likes very much". P would then perceive that he and O have a common area of agreement, namely their positive affect toward the behavior. This assumed agreement may then have the effect of reducing P's dislike of O at least with respect to the situation he has been asked to consider. P may then be more likely to see O as being responsible for, as causing, the liked action. If it were demonstrated that this is empirically true it would help explain why the fourth hypothesis (where P dislikes O and





likes X, P will tend to explain O's behavior X by assigning the locus of cause to something other than O.) was not supported.

This would only be the case, however, if it were also demonstrated that individuals tend to project positive affect more than they tend to project negative affect. If individuals tended to project negative affect to the same extent this would also have placed agreement forces in opposition to balance forces in the third hypothesis (where P dislikes O and dislikes X, P will tend to explain O's behavior X by assigning the locus of cause to O). If individuals tend to project negative affect to the same extent as positive affect, and if this has the effect of overriding P's dislike for O, it is unlikely that this hypothesis would have been so strongly supported. It would seem, then, that if agreement forces are a significant factor in POX units including a unit formation, it must also be the case that negative and positive affect are differentially projected. This may seem somewhat unlikely; however, in the light of Jordan's<sup>9</sup> demonstration that "liking" and "disliking" do not have oppositely equivalent effects, it is worth testing.

If data were available concerning the subjects' predictions of O's attitude toward X it would be possible to test Rodrigues' agreement hypothesis in POX units containing unit formation. However, no such data are available. Furthermore, one cannot provide indirect evidence for such a test by making assumptions about P's predictions of O's attitude toward X, since this would affirm what one is setting out to test.

Another study would be necessary to test for the presence of





agreement forces where the POX unit contains a unit formation. The necessary data could be collected by repeating the present study with additional questions designed to elicit the subjects' predictions as to how O feels about the behavior he is exhibiting.

In repeating the present study so that the presence of forces toward agreement could be checked, a further change should be incorporated to allow the test of a hypothesis in competition with the agreement hypothesis.

It will be remembered that in the first chapter<sup>10</sup> it was argued that subjects feel some tension producing anxiety in response to persons they dislike and that this tension is in addition to the tension which Heider postulates as a reaction to imbalance. Accordingly, where these two sources of tension occur together, it is reasonable to assume that there will be a greater striving toward balance than there will be in the case where only one occurs.

The results of the present study do not bear out this expectation; however, in retrospect it seems likely that the following situations may have occurred. When the subjects were asked to think of someone they "liked very much", and to a somewhat lesser extent when they were asked to think of someone they "liked", they thought of persons who were significant others and with whom they frequently interacted. On the other hand, when subjects were asked to think of people that they "disliked very much" and just "disliked", it seems likely that they thought of persons that they had negative feelings toward, but not people who were of much importance to them or with whom they interacted frequently. Indeed, especially with respect to the "dislike" category, it seems likely that the persons who were placed under this



rubric were persons whom the subjects disliked but in an almost disinterested fashion.

If this situation does in fact describe the responses of a significant number of subjects, one would not expect that these subjects would have as much emotional investment in seeking balance when the P - O bond is negative as they do when it is positive and concerns persons significant to them.

In the light of these observations the original argument would have to be amended to take into account the significance to the subject of those persons he thinks of in the experimental situation. The questions dealing with this part of the data collection could be designed in such a way that the subject would think of one person for each of several points along a continuum from a person who is "liked very much" and is a significant other, to a person who is "disliked very much" and is significant to the subject.<sup>11</sup>

The additional data derived from the additions to the procedure of the study would allow the assessment of whether the unexpected results obtained when the P - O bond is negative are due to agreement forces, or a lack of significant involvement on the part of the subjects with the persons cited as "disliked", or both.

#### SUMMARY

The results show that the attribution of causality varies as a function of affect toward the behavior and the actor in situations where an explanation is offered for the actor's exhibiting the behavior in question. More specifically, the results show that (1) when the affect toward the actor is positive and the affect toward the behavior



is positive, then the locus of cause tends to be attributed to the actor; (2) when the affect toward the actor is positive and the affect toward the behavior is negative, then the locus of cause tends to be attributed to something other than the actor; (3) when the affect toward the actor is negative and the affect toward the behavior is negative, then the locus of cause tends to be attributed to the actor; and (4) When the affect toward the actor is negative and the affect toward the behavior is positive, then the locus of cause tends to be attributed to the actor.

The first three of the above findings are in agreement with the predictions of balance theory; the fourth finding is in a direction opposite to that predicted.

The results of the present study, together with Rodrigues' findings concerning the presence of agreement forces, have led to a proposal for a further study. This study, which has been adumbrated above, would test for the presence of agreement forces in POX units containing a unit formation and would, at the same time, test the possibility that the unexpected results when the P - O bond is negative are due to the reduced significance of those named by the subjects as disliked persons.

Studies such as the one presented here and the proposed study contribute to the task of setting the limits under which various sources of cognitive bias operate. Such research may then be integrated into a more inclusive theory of cognitive processes and interpersonal relations.





## FOOTNOTES

<sup>1</sup>S. H. Davol, "An Empirical Test of Structural Balance in Sociometric Triads," Journal of Abnormal and Social Psychology, (1959, 59), pp. 393-398.

E. Harburg and K. Price, (unpublished study cited by R. B. Zajonc), "The Concept of Balance, Congruity, and Dissonance," Public Opinion Quarterly, (1960, 24), pp. 280-296.

M. W. Horowitz, J. Lyons, and H. V. Perlmutter, "Induction of Forces in Discussion Groups," Human Relations, (1951, 4) pp. 57-76.

N. Jordan, "Behavioral Forces That are a Function of Attitude and Cognitive Organization," Human Relations, (1953, 6), pp. 273-287.

N. Kogan and R. Tagiuri, "Interpersonal Preference and Cognitive Organization," Journal of Abnormal and Social Psychology, (1958, 56), pp. 113-116.

M. Ohashi, "Sociometric Choice Behavior and Interpersonal Perception in a Triad," Japanese Psychological Research, (1964, 6), pp. 72-84.

K. O. Price, E. Harburg, and T. M. Newcomb, "Psychological Balance in Situations of Negative Interpersonal Attitudes," Journal of Personality and Social Psychology, (1966, 3), pp. 265-270.

A. Rodrigues, "On the Differential Effects of Some Parameters of Balance," Journal of Psychology, (1965, 61), pp. 241-250.

A. Rodrigues, "The Psycho-logic of Interpersonal Relations," (Doctoral dissertation, University Microfilms, Ann Arbor, Michigan, 1966).

<sup>2</sup>See the references in the above footnote.

<sup>3</sup>N. Jordan, op. cit.

<sup>4</sup>Cf. D. Katz and E. Stotland, "A Preliminary Statement to a Theory of Attitude Structure and Change," S. Koch (ed.) Psychology: A Study of a Science. Vol. 3. Formations of the Person and the Social Context. New York: McGraw-Hill, (1959), pp. 423-475; and R. Zajonc, "The Concepts of Balance, Congruity, and Dissonance," Public Opinion Quarterly, (1960, 2), pp. 280-296.

<sup>5</sup>Rodrigues, 1965, op. cit., 1966, op. cit., and A. Rodrigues, "The Effects of Balance, Positivity, and Agreement in Triadic Social Relations," Journal of Personal and Social Psychology, (1967, 4), pp. 472-476.

<sup>6</sup>Rodrigues, A., "The Biasing Effect of Agreement in Balanced and Imbalanced Triads," Journal of Personality, Vol. 36, No. 1 (March, 1968), pp. 138-153.





<sup>7</sup>Ibid., p. 139.

<sup>8</sup>See the references in Footnote #1 above.

<sup>9</sup>Jordan warns us about the dangers of assuming that liking will have an oppositely equivalent effect to disliking.

It should be noted that in the studies Jordan cites where oppositely equivalent effects were not obtained from "liking" and "disliking", the experimenters were not successful in controlling for the significance to the subjects of the persons they cited as "liking" and "disliking". Cf. Nehemiah Jordan, "The 'Asymmetry' of 'Liking' and 'Disliking': A Phenomenon Meriting Further Reflection and Research," Public Opinion Quarterly, Vol. XXIX, No. 2, (1965), pp. 315-322.

<sup>10</sup>See page 6, Chapter I.

<sup>11</sup>At opposite poles of the continuum the persons the subject identifies would have significance for quite different reasons; in one case the significance may derive from love, in the other, perhaps the presence of a threat.



## SELECTED BIBLIOGRAPHY

### BOOKS

- Berger, J., B. P. Cohen, J. L. Snell and M. Zelditch. Types of Formalization in Small Group Research. Boston: Houghton Mifflin Co., 1962.
- Heider, Fritz. The Psychology of Interpersonal Relations. New York: John Wiley and Sons, 1958.
- Sellin, Thorsten and Marvin E. Wolfgang. The Measurement of Delinquency. New York: John Wiley and Sons, 1964.

### ARTICLES AND PERIODICALS

- Cartwright, Dorwin and Frank Harary. "Structural Balance: A Generalization of Heider's Theory," Psychological Review, Vol. 63 (September, 1956), pp. 277-293.
- Davol, S. H. "An Empirical Test of Structural Balance in Sociometric Triads," Journal of Abnormal and Social Psychology, (1959, 59) pp. 393-398.
- Harburg, E. and K. Price. (unpublished study cited by R. B. Zajonc), "The Concept of Balance, Congruity and Dissonance," Public Opinion Quarterly, (1960, 24), pp. 280-296.
- Heider, Fritz. "Social Perception and Phenomenal Causality," Psychological Review, Vol. 51 (November, 1944), pp. 358-374.
- Heider, Fritz. "Attitudes and Cognitive Organization," Journal of Psychology, Vol. 21 (January, 1946), pp. 107-112.
- Horowitz, Milton W., Joseph Lyons and Howard V. Perlmutter. "Induction of Forces in Discussion Groups," Human Relations, Vol. 4 (1951), pp. 57-76.
- Jordan, Nehemiah. "Behavioral Forces that are a Function of Attitudes and of Cognitive Organization," Human Relations, Vol. 6 (1953), pp. 273-287.
- Jordan, Nehemiah. "The 'Asymmetry' of 'Liking' and 'Disliking': A Phenomenon Meriting Further Reflection and Research," Public Opinion Quarterly, Vol. XXIX, No. 2 (1965), pp. 315-322.
- Katz, D. and E. Stotland. "A Preliminary Statement to a Theory of Attitude Structure and Change," S. Koch (ed.) Psychology: A Study of a Science, Vol. 3, Formations of the Person and the Social Context, New York: McGraw-Hill, (1959), pp. 423-475.



Kogan, N. and R. Tagiuri. "Interpersonal Preference and Cognitive Organization," Journal of Abnormal and Social Psychology, (1958,56), pp. 113-116.

Morrisette, Julian O. "An Experimental Study of the Theory of Structural Balance," Human Relations, Vol. 11 (1958), pp. 239-254.

Price, K.O., E. Harburg and T. M. Newcomb. "Psychological Balance in Situations of Negative Interpersonal Attitudes," Journal of Personality and Social Psychology, (1966, 3), pp. 265-270.

Rodrigues, A. "On the Differential Effects of Some Parameters of Balance," Journal of Psychology, (1965, 6), pp.241-250.

Rodrigues, A. "The Psycho-logic of Interpersonal Relations," (Doctoral dissertation), University Microfilms, Ann Arbor, Michigan, (1966).

Rodrigues, A. "The Effects of Balance, Positivity and Agreement in Triadic Social Relations," Journal of Personality and Social Psychology, (1967, 4), pp. 472-476.

Rodrigues, A. "The Biasing Effect of Agreement in Balanced and Imbalanced Triads," Journal of Personality, Vol. 36, No. 1 (March, 1968), pp. 138-153.

#### UNPUBLISHED PAPERS

Schiffman, Harold and Ronald Wynne. "Cause and Affect," Princeton, Educational Testing Service, RM-63-7 (July, 1963).



APPENDIX I  
SAMPLE BOOKLET





DO NOT OPEN BOOKLET UNTIL INSTRUCTED TO DO SO

M.A. Thesis  
John L. Evans  
Dept. of Sociology



1) Faculty: (check one) Arts\_\_\_\_  
Science\_\_\_\_  
Education\_\_\_\_  
Phys. Ed.\_\_\_\_  
Agriculture\_\_\_\_  
Commerce\_\_\_\_  
Graduate Studies\_\_\_\_  
Other\_\_\_\_\_

2) Registration: (check one)  
Full time student\_\_\_\_  
Part time student\_\_\_\_  
Special (not working towards  
a degree at the U. of A.)\_\_\_\_

3) Occupation: (write in specifically)  
\_\_\_\_\_

4) Sex: (check one) Male\_\_\_\_  
Female\_\_\_\_

5) Age: (check one)  
Under 20\_\_\_\_  
20-29\_\_\_\_  
30-39\_\_\_\_  
40-49\_\_\_\_  
50-59\_\_\_\_  
60-69\_\_\_\_

6) Years of university  
completed: (check one)  
none\_\_\_\_  
one\_\_\_\_  
two\_\_\_\_  
three\_\_\_\_  
four\_\_\_\_  
five\_\_\_\_



|                          |  |                          |   |
|--------------------------|--|--------------------------|---|
| <input type="checkbox"/> | Keeping a common bawdy house (a house of "ill repute")                                 | <input type="checkbox"/> | "bar-hopping"   |
| <input type="checkbox"/> | Rising to the top in business  | <input type="checkbox"/> | Engaging in homosexual behavior                                       |
| <input type="checkbox"/> | Risking the loss of a highly valued position rather than compromising one's principles | <input type="checkbox"/> | Embezzling 200,000 dollars from a provincial welfare agency           |
| <input type="checkbox"/> | Sexually assaulting and torturing pre-school children                                  | <input type="checkbox"/> | Refusing to pass on gossip regarding a person one thoroughly dislikes |
| <input type="checkbox"/> | Wife (or husband) swapping   | <input type="checkbox"/> | Serving as a volunteer worker for a charity organization              |
| <input type="checkbox"/> | Serving as a volunteer worker for a charity organization                               | <input type="checkbox"/> | Engaging in homosexual behavior                                       |
| <input type="checkbox"/> | Embezzling 200,000 dollars from a provincial welfare agency                            | <input type="checkbox"/> | Rising to the top in business   |
| <input type="checkbox"/> | Risking the loss of a highly valued position rather than compromising one's principles | <input type="checkbox"/> | Keeping a common bawdy house (a house of "ill repute")                |
| <input type="checkbox"/> | Sexually assaulting and torturing pre-school children                                  | <input type="checkbox"/> | Refusing to pass on gossip regarding a person one thoroughly dislikes |
| <input type="checkbox"/> | "bar-hopping"  | <input type="checkbox"/> | Wife (or husband) swapping  |













3



4



5





APPENDIX II  
INSTRUCTOR'S GUIDE



(Since gestures, actual manipulation of a sample booklet, and additional examples were used there was, of course, some variation among the administrative sessions. Such variations were, however, so slight that it seems unlikely that investigator variance was a significant variable.)

1. Do not turn the pages of your booklets until you are instructed to do so.
2. Introduce project and thank the subjects in advance.
3. Now, turn the title page and answer the questions on the next page. Illustrate.
4. Turn to the next page and read each of the behaviors described there. Pause while they do so.
5. Indicate with a check mark that behavior to which you feel the most indifferent, e.g. that point of relative neutrality between liking and disliking. Be sure the subjects know what is wanted here.
6. Do not turn the page yet. I will project some instructions on the screen so that we can look more closely at the behaviors. Project Rating Instruction (Cf. Appendix III) giving further examples and going over the instructions until you are sure that all of the subjects understand the procedure.
7. Allow several minutes for the subjects to complete their ratings.
8. Now turn the page - the page you should be at has a large 1 in the upper right hand corner. Now once again I will project some instructions on the screen. Project instructions for notations (Cf. Appendix IV) and go over giving further examples until the procedure is thoroughly understood.
9. Allow the subjects about five minutes to complete their notations.



10. Now that you have finished your identifying notations fold down the last page of the booklet. Then turn back to the page where you have an identifying notation for the individual you have indicated you "like very much". Illustrate with sample booklet.
11. Now with reference to that behavior which is marked by a 1 on the last page of the booklet I would like you to consider what you think would explain, would account for, the action of the individual you "like very much" if he did in fact exhibit the behavior in question.
12. I would then like you to write a very brief explanation of what you think would account for, would explain, the action of the individual you are thinking about if that person did in fact exhibit behavior No. 1. Stress that the question is not "Would it be possible for this person to exhibit the behavior in question?" but "What would account for that person's actions if he did in fact exhibit the behavior?" Repeat these instructions until every subject knows that the only question they are to respond to is "What would account for, would explain the action of the person you are thinking of if he in fact did exhibit the behavior in question?"
13. Have the subjects go on with the other four explanations at their own speed when they understand the instructions.

- On the page with a 2 in the upper right hand corner where the subjects have placed a notation for someone they like their explanation will involve the behavior marked with a 2 on the last page. Similarly with pages 3, 4 and 5, and the behaviors marked 3, 4 and 5. Make sure the subjects understand the procedure here before allowing them to continue with their explanations.





### APPENDIX III

#### MAGNITUDE ESTIMATION PROCEDURE: INSTRUCTIONS TO SUBJECTS



I WOULD NOW LIKE YOU TO SHOW HOW MUCH YOU APPROVE OF EACH OF SEVERAL BEHAVIORS. YOU INDICATE HOW MUCH YOU APPROVE OF EACH BEHAVIOR BY WRITING DOWN A NUMBER IN THE CELL TO THE LEFT OF EACH BEHAVIOR WHICH SHOWS HOW YOU FEEL ABOUT THAT BEHAVIOR. THE FIRST BEHAVIOR HAS BEEN DONE AS AN EXAMPLE. IT HAS BEEN GIVEN A SCORE OF 10. USE THIS BEHAVIOR AS A STANDARD. EVERY OTHER BEHAVIOR SHOULD BE SCORED IN RELATION TO THIS STANDARD BEHAVIOR. FOR EXAMPLE, IF YOU APPROVE OF A BEHAVIOR TWICE AS MUCH AS YOU DO THE STANDARD BEHAVIOR, GIVE IT A SCORE OF 20. IF YOU APPROVE OF A BEHAVIOR HALF AS MUCH AS YOU DO THE STANDARD BEHAVIOR, GIVE IT A SCORE OF 5. YOU MAY USE ANY NUMBER, NO MATTER HOW LARGE IT IS, JUST SO LONG AS IT REPRESENTS HOW YOU FEEL ABOUT EACH BEHAVIOR IN RELATION TO THE STANDARD BEHAVIOR. YOU WILL HAVE ABOUT FIVE MINUTES TO DO THIS. YOU SHOULD PLACE A NUMBER IN EACH CELL. REMEMBER, THIS IS NOT A TEST. THE IMPORTANT THING IS HOW YOU FEEL ABOUT EACH BEHAVIOR.



#### APPENDIX IV

PROCEDURE FOR LOCATING PERSONS ON A FIVE POINT SCALE  
OF AFFECT: INSTRUCTIONS TO SUBJECTS



I WOULD NOW LIKE YOU TO THINK OF FIVE DIFFERENT PEOPLE THAT YOU WOULD PLACE IN THE FOLLOWING CATEGORIES:

1. LIKE VERY MUCH
2. LIKE
3. FEEL INDIFFERENT TO
4. DISLIKE
5. DISLIKE VERY MUCH

THINK OF SPECIFIC PEOPLE WHICH YOU WOULD PLACE IN EACH OF THE ABOVE CATEGORIES. ON THE PAGES OF YOUR BOOKLET WITH THE LARGE NUMBERS IN THE UPPER RIGHT HAND CORNER MAKE SOME NOTATION WHICH WILL IDENTIFY FOR YOU THE PERSONS YOU PLACE IN THE FIVE CATEGORIES. (I HAVE NO INTEREST IN KNOWING WHO YOU ARE THINKING OF). NOW, SPECIFICALLY, ON PAGE 1 WRITE SOMETHING DOWN WHICH WILL IDENTIFY FOR YOU THE PERSON WHICH YOU PUT IN THE CATEGORY "LIKE VERY MUCH". ON PAGE 2 YOU WILL MAKE SOME NOTATION WHICH WILL IDENTIFY FOR YOU THE PERSON WHICH YOU PUT IN THE CATEGORY "LIKE". ON PAGES 3, 4 AND 5 YOU WILL FOLLOW THE SAME PROCEDURE FOR PERSONS YOU "FEEL INDIFFERENT TO", "DISLIKE" AND "DISLIKE VERY MUCH", RESPECTIVELY.







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